CHAPTER - IV

RESEARCH METHODOLOGY

4.0 INTRODUCTION

Research Methodology is a way to systematically solve the research problem. Research is a diligent and systematic inquiry or investigation into a subject in order to discover or revise facts, theories, application etc. (http://dictionary.reference.com/browse/research). Methodology is the system of methods followed by particular discipline (http://elook.org/dictionary/methodology.html). Thus a research methodology is the way how we conduct our research.

This chapter discusses research methodology adopted for the study. It is basically the plan and procedure that highlight the details of the work carried out by the investigator. The chapter also discusses variables in the study, research design followed by sampling. It furthermore discusses measuring instruments, procedure of data collection and the statistical techniques used for analysis of the data.

4.1 VARIABLES IN THE STUDY

Variables are defined as characteristics of persons, objects, groups or events to which qualitative and quantitative values can be assigned. These values can also be categorical (Mason and Bramble, 1989). Two types of variables were worked upon in the present study. These were Demographic and Criterion variables. The demographic and criterion variables applicable to the present study are discussed below:

Demographic Variables

There were four demographic variables that grouped respondents by common characteristics. The demographic variables included Residential Background, Gender, Academic Stream and Frequency of Internet Access. Two levels of Residential Background i.e. Metropolitan and Non-metropolitan were taken. Gender is a dichotomous variable (Male and Female). Two levels of Academic Stream i.e. Science
Group and Commerce Group were taken. Three levels of Frequency of Internet Access – Regular, Moderate and Infrequent Internet Access were included in the present study.

**Criterion Variables**

There were three criterion variables that grouped responses by content categories. The criterion variables included Social Competence, Emotional Maturity and General Well-being. The objective of taking these variables was to investigate the perceived influence of Internet use on these variables on adolescents because of their Internet Access. These variables measured by administering Social Competence Scale, Emotional Maturity Scale and General Well-being Scale.

**4.2 Research Design**

The present study was intended to find out the perceived influence of Internet use on Social Competence, Emotional Maturity and General Well-being of adolescents. Hence, the descriptive survey research with factorial design was applied. Descriptive survey research is probably the most frequently used mode of observation in the social sciences. Typically, the researcher selects a sample of respondents from a certain population and administers standardised questionnaires/scales to them (Beukman, 2005).

To study the main and interactive influences among Residential Background, Gender, Academic Stream and Frequency of Internet Access on Social Competence, Emotional Maturity and General Well-being of Internet user adolescents, $2 \times 2 \times 2 \times 3$ factorial design was employed. In this design, the three demographic variables were varied at two levels and fourth demographic variable was varied at three levels. Residential Background was designated as ‘A’ ($A_1$ for Metropolitan and $A_2$ for Non-metropolitan Residential Background), Gender as ‘B’ ($B_1$ for Male and $B_2$ for Female), Academic Stream was designated as ‘C’ ($C_1$ for Science Group and $C_2$ for Commerce Group) and Frequency of Internet Access as ‘D’ factor ($D_1$ for Regular, $D_2$ for Moderate and $D_3$ for Infrequent Internet Access). Metropolitan Male adolescents of Science Group with Regular, Moderate and Infrequent Internet access were designated as $A_1$, $B_1$, $C_1$, $D_1$; $A_1$, $B_1$, $C_1$, $D_2$ and $A_1$, $B_1$, $C_1$, $D_3$ whereas Non-metropolitan Female adolescents of Commerce Group
with Regular, Moderate and Infrequent Internet access were designated as $A_2$, $B_2$, $C_2$, $D_1$; $A_2$, $B_2$, $C_2$, $D_2$ and $A_2$, $B_2$, $C_2$, $D_3$. In this way, the adolescent students belonging to different Residential Background were divided according to Gender and then the Male and Female students were relegated in Academic Stream and finally Science Group and Commerce Group were classified in different Frequencies of Internet Access. All these categories of the adolescents were different from one another. The research design embraced for the present investigation is given in figure 4.1.

So, the descriptive survey design adopted in the present study was four-way factorial ($2 \times 2 \times 2 \times 3$) design. There were, thus $2 \times 2 \times 2 \times 3 = 24$ (Twenty Four) combinations. The next step was to select the respondents for participation.

### 4.3 SAMPLE

The initial sample for the present study consisted of 570 Internet user adolescents studying in different senior secondary schools of Delhi and Bahadurgarh. The sample included both Male and Female adolescent students of Science and Commerce Academic Stream. A stratified multi-stage random sampling technique was used to collect the data. Delhi was selected to represent the Metropolitan area and Bahadurgarh was for Non-metropolitan area. Delhi and Bahadurgarh was divided in five zones i.e. east, west, north, south and central zone. A list of schools of Delhi and Bahadurgarh was obtained from the concerned District Education Officer (DEO) for each zone. In order to attain a reasonable stratification, 20 schools were randomly selected by lottery method from the list. Only those Internet user adolescents were considered sample that completed all measuring tools. 25 Internet user adolescents from each school were selected for the study. In this way, a sample of 496 Internet user adolescents was adequately representative of the population of Metropolitan and Non-metropolitan area for the study. Total sample was divided at each level according to the design of the study. The split up of the sample is given in figure 4.2. The names of the sampled schools are presented in table 4.1:
Table 4.1: List of Sampled Schools

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of Metropolitan Schools</th>
<th>Name of Non-metropolitan Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>CRPF School (25)</td>
<td>PDM Public School (25)</td>
</tr>
<tr>
<td>5.</td>
<td>Modern School (25)</td>
<td>Triveni Memorial Public School (25)</td>
</tr>
<tr>
<td>7.</td>
<td>B. V. Bhavan School (23)</td>
<td>S. R. Century Public School (25)</td>
</tr>
<tr>
<td>10.</td>
<td>DAV Public School (25)</td>
<td>DAV Centuary Public School (23)</td>
</tr>
</tbody>
</table>

Thus there were thus 24 groups in the present study. From each of these groups, because in each cell, numbers of respondents were unequal at level of Frequency of Internet Access, therefore, the investigator decided to pick up all respondents from each cell. In this way, the final sample comprised of 496 Internet user adolescents in all. So, the factorial design had Four hundred Ninety Six Internet user adolescent respondents.

4.4 MEASURING INSTRUMENTS

As per the requirement of the study, the following tools were employed:

1. **Social Competence Scale**: In order to measure the Social Competence of the sampled adolescents, a Social Competence Scale (SCS) constructed and standardized by Sharma, Shukla and Shukla (1992) was used. The scale comprised of 50 items measuring 18 factors of social skills and behaviour of Indian adolescents of both the sexes. It is a five point scale ranging from ‘very high’, ‘high’, ‘average’, ‘low’ and ‘very low’ respectively. The scoring was done as per directions in the manual. The highest score on the scale can be obtained 250 and lowest can be 50. The coefficient of temporal stability employing
test-retest method has been estimated to be $r_{tt} = .56$ whereas the coefficient of interrater reliability was found to be $r_{tt} = .67$ and validity was found to be .84. All the components of the SCS have been found positively correlated with the composite social competence ranging from $r = +.701$ to $r = +.142$ which indicates that all the 18 components of the social competence scale measure broadly the same attribute of social competence through these components what the composite social competence scale is measuring.

2. **Emotional Maturity Scale:** Emotional Maturity Scale is constructed and standardized by Singh and Bhargava (1990). The scale comprised of 48 items and is based on five major areas of emotional maturity i.e. emotional unstability, emotional regression, social maladjustment, personality disintegration and lack of independence. The highest the score on the scale is greater the degree of the emotional immaturity and vice-versa. It is a self–reporting five point scale. Items of the scale are in question form demanding information for each in any of the five options- ‘very much’, ‘much’, ‘undecided’, ‘probably’, ‘never’. The highest score of the Emotional Maturity Scale can be obtained 240 and lowest can be 48. The test-retest reliability of the scale was 0.75 and internal consistency of the scale was checked by calculating the coefficient of correlations between total scores and scores on each of the five areas i.e. emotional unstability (.75), emotional regression (.63), social maladjustment (.58), personality disintegration (.86), lack of independence (.42). The scale was validated against external criteria i.e. the Gha (.64). This scale is meant for adolescents and adults.

3. **General Well-being Scale:** General Well-being Scale (GWBS) is constructed and standardised by investigator and supervisor (Kalia and Deswal, 2011). The scale consisted of 55 items represented in four sub-scales: physical well-being, emotional well-being, social well-being and school well-being. It is a self-reported five point scale included positive and negative items ranging from ‘strongly disagree’, ‘disagree’, ‘undecided’, ‘agree’, and ‘strongly agree’. The reliability of the GWBS was estimated by using Split-half method and Spearman-Brown method. The reliability coefficient was found .989 and total reliability of the scale was estimated .994. The validity of the scale was checked by calculating the coefficient of correlations between scores on the total
scale and scores on each of the four sub-scales. The correlations ranged from .639 to .715. With its so high reliability and validity, the scale ensures greater significance and wide application in the measurement of general well-being of adolescents.

4. **Internet Use Questionnaire:** To provide a reliable and valid base for the present research, Internet use questionnaire is developed by investigator and supervisor. Internet use was confirmed by filling out the Internet Use Questionnaire about their access to the Internet, the total time they spent online, time spent on e-mail, and where (e.g. home versus school) they typically accessed the Internet, information about their online activities and nature and extent of their online relationships. The statements in question form included in the questionnaire have a reliable and valid base of previous and recent researches conducted in this field. The one and only need to fill this questionnaire is to get the authentic information about adolescents’ Internet access. This information was very essential to conduct the quality descriptive survey and to ascertain the perceived influence of Internet use on Social Competence, Emotional Maturity and General well-being of adolescents. Thus findings of the study can be generalized and implemented in a positive manner.

The above tools were administered to sampled adolescents. The responses thus collected were scored and subjected to statistical procedures using SPSS Package.

4.5 **PROCEDURE OF DATA COLLECTION**

The next step after measuring instruments selection was data collection by administering the scales and questionnaire. Data was collected through direct administration of scales and questionnaire to respondents. This data technique is much more efficient, easier and quicker. In addition, the researcher also has the opportunity to explain the purpose of the research, to highlight the instructions for completion and to immediately handle queries and uncertainties.

Prior to data collection, the investigator personally visited the schools located in metropolitan and non-metropolitan area and request principals to allow her to collect the data for research. All school principals assured full co-operation to the investigator.
Respondents in the study included those who participated directly through filling the scales and questionnaire. Investigator sought information from male and female adolescents who used the Internet. The scales and questionnaire were administered to a group of randomly selected respondents. Detailed information and essential guidelines was provided to all respondents and aim of the survey was also fully explained to all respondents. Data was collected by using scales and questionnaire filled out in the classroom settings. The students were asked to tick mark and write the most appropriate response in their opinion. The investigator assured the respondents that the information so collected will be used only for research purpose. On completion, the researcher collected scales and questionnaire from the respondents.

4.6 SCORING PROCEDURE

Scoring of all the scales, used for research purpose in the present study was done by the investigator, keeping in view the norms according to the manual of the scale under the guidance of supervisor.

4.7 STATISTICAL TECHNIQUES EMPLOYED

The collected data was analyzed keeping in view the objectives and design of the study. The data was analyzed by using SPSS Package. The following statistical techniques were employed for analysis the data:

1. Descriptive statistics such as Means and Standard Deviations were worked out to describe the nature of data.

2. In order to find out the perceived influence of Residential Background, Gender, Academic Stream and Frequency of Internet Access on Social Competence, Emotional Maturity and General Well-being of Internet user Adolescents, Four-way Analysis of Variance (2x2x2x3) was employed.

3. Further, where F-ratio was significant, in case of interactive influences, simple influences and simple interactive influences at each level of significant interaction was obtained by employing ANOVA to understand the direction of significance.

4. To represent the significant results pictorially, line diagrams were plotted.
5. Partial eta squared method was used to determine the effect size.

4.8 SUM - UP

This methodology chapter was concerned with the plan and procedure of the research carried out by the researcher. The research variables and design was explained in detail by referring to the sample. The measuring instruments, procedure of data collection and scoring were also discussed. It furthermore discussed the statistical techniques employed for the analysis of the data. The next chapter will cover the results of the study.